

**Technical Data Sheet**

**Type:** 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.

**Uses:** Powder, film

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

Physical Properties	Value (Metric)	Unit	Test Method
Shore Hardness	78	Shore A	ISO 868 (ASTM D-2240)
Specific Gravity	1.18	g/cm <sup>3</sup>	ISO 2781 (ASTM D-792)
Softening range	120–130	° C	MQSA 70A
Melting range	130–140	° C	MQSA 70A
Activation temperature	120	° C	LA-17
Thermoplasticity	Low		MQSA 68A
Melt Viscosity (160° C / 2.16 Kg)	1,050	Pa.s	ISO 1133
Tensile Strength	24 (3481)	MPa (psi)	ISO 527 (ASTM D-412)
Ultimate Elongation	650	%	ISO 527 (ASTM D-412)
Tensile Stress at:			
- 100 % Elongation	4 (580)	MPa (psi)	ISO 527 (ASTM D-412)
- 300 % Elongation	5 (725)	MPa (psi)	ISO 527 (ASTM D-412)

\*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.

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## MATERIAL PREPARATION

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.

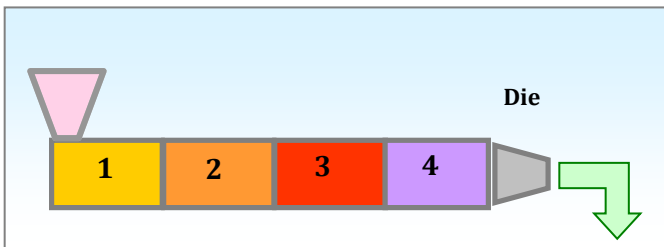
## EXTRUSION

In accordance with our experience, the characteristics of the extruder that is suitable for processing **Pearlbond™ 12C75** are the following:

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:

### Recommended Starting INSERT INJECTION MOLDING/EXTRUSION Temperature Profile:



<b>Zone 1</b>	115° C (239° F)	125° C (257° F)
<b>Zone 2</b>	155° C (311° F)	165° C (329° F)
<b>Zone 3</b>	145° C (293° F)	155° C (311° F)
<b>Zone 4</b>	145° C (293° F)	155° C (311° F)
<b>Die</b>	135° C (275° F)	145° C (293° F)

**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.

## 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.

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## 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.

**For further information refer to Lubrizol Advanced Materials processing guides.**

## STORAGE

**Pearlbond™ 12C75** must be stored in a cool (15–25°C) and 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.

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