

Technical Data Sheet

PEARLBOND™ 301 is a high performance aromatic polyester-based thermoplastic polyurethane (TPU) for use in hot melt adhesives applications (including film & sheet). This is a very soft plasticizer-free TPU with excellent low temperature flexibility.

PEARLBOND™ 301 is available in colourless translucent granules.

CHARACTERISTICS

Property	Test Method	Typical Values *
Density @ 20°C	ISO 2781 (ASTM D-792)	1.19 g/cm ³
Shore Hardness	ISO 868 (ASTM D-2240)	52 ± 3 A
Tensile strength ¹	ISO 527 (ASTM D-412)	13 ± 2 MPa (1885 ± 290 psi)
Elongation @ break ¹	ISO 527 (ASTM D-412)	950 ± 50 %
Modulus @ 100% elongation ¹	ISO 527 (ASTM D-412)	1.1 ± 0.2 MPa (160 ± 29 psi)
Modulus @ 300% elongation ¹	ISO 527 (ASTM D-412)	1.6 ± 0.2 MPa (232 ± 29 psi)

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

¹ Based on plaques made in the hydraulic press (around 2 mm)

APPLICATIONS

PEARLBOND™ 301 can be used for making heat-sealable fabrics (*thermobonding films, webs...*), 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.

PEARLBOND™ 301 is suitable for use in extrusion and powder applications where the following features are of high value to the customer: Low activation temperature and high bonding strength to diverse substrates.

It can also be combined with more rigid resins or reactive systems to increase the flexibility and elastomeric behaviour (compounds):

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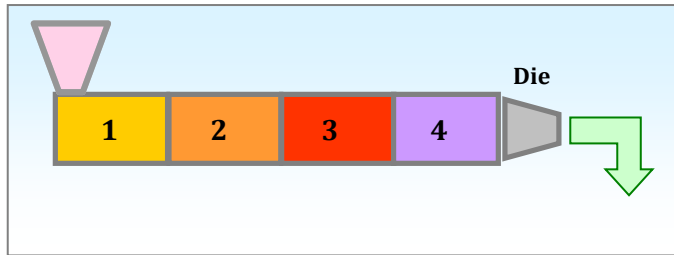


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EXTRUSION

In accordance with our experience, the characteristics of the extruder that is suitable for processing **PEARLBOND™ 301** are the following:

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



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

L/D ratio.- 25:1-30:1 **Cooling.-** Air, **Screw.-** 2:1- 3:1, **Speed.-** 20 rpm, **Thickness Die.-** 0,2 mm.

HEALTH AND SAFETY

A safety data sheet on **301** 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.

STORAGE

PEARLBOND™ 301 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.

For further information refer to Lubrizol Advanced Materials processing guides.

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