

Technical Data Sheet

Type: ESTANE® ETE 90AB3 NAT 01 is polyester-based thermoplastic polyurethane

Appearance: Translucent, colourless pellets

Features: Hardness with excellent mechanical properties

Application: profiles, belts, tubes and film. In the case of injection moulding, this grade is only recommended for certain applications, e-g- when large, hard-to-fill mould cavities are used

Physical Properties *	Value (Metric)	Unit	Test Method
Hardness	A/91	Shore A	ISO 868/ASTM D-2240
Specific Gravity	1.20	g/cm ³	ISO 2781/ASTM D-792
Tensile Strength	40 (5801)	MPa	ISO 527/ASTM D-412
Ultimate Elongation	500	%	ISO 527/ASTM D-412
Tensile Stress at:			
- 100 % Elongation	8 (1160)	MPa	ISO 527/ASTM D-412
- 300 % Elongation	16 (2320)	MPa	ISO 527/ASTM D-412
Tear Strength	112 (639)	kN/m	ISO 34-1B (ASTM D-624 Die C)
Compression Set			
70h at 23°C (73°F)	26	%	ASTM D395B
22h at 70°C (158°F)	40	%	ASTM D395B
Abrasion Loss	30	mm ³	ISO 4649-A
Tg by DSC, 10°C (50°F)/min	-40 (-40)	°C (°F)	ISO 11357-2
Melting Range (MFI=10**)	183-193 (361-379)	°C (°F)	MQSA 111
Moisture Content	<0.1	%	MQSA 44

Prior to testing samples were conditioned at 23°C for 48 hours.

Based on injected moulded plaques.

Listed values are "typical (average) values" and should/cannot be applied for specification purposes.

Material Preparation

- Prior to processing, **ESTANE® ETE 90AB3 NAT 01** must be dried at **100-110°C** (212-230 °F) for 2-4 hours.
- It is recommended to dry the material in a dehumidifying type dryer.

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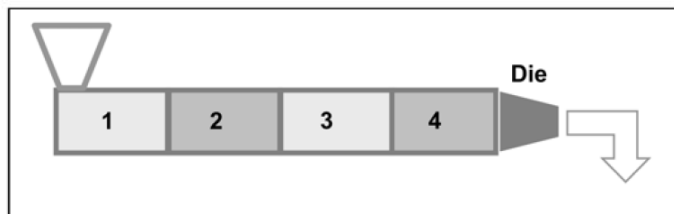
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Recommended Starting INSERT EXTRUSION/ INJECTION MOLDING Temperature Profile:

Extrusion:

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



Zone 1	190°C (374°F)	200°C (392°F)
Zone 2	195°C (383°F)	210°C (410°F)
Zone 3	200°C (392°F)	215°C (419°F)
Zone 4	200°C (392°F)	220°C (428°F)
Die	190°C (374°F)	210°C (410°F)

Type: 30/25d (l/d = 25:1), Cooling: Air, Screw: 3:1, Speed: 40 rpm, Breaker plate:--- Filter:---.Thickness Die: 0,2 mm,Pre-heating: 1h @ 100 °C (212 °F).

Injection moulding:

The obtained data are based on plaques produced in an injection moulding equipment with the following characteristics and suggested processing conditions:

Clamping force	50 tons
Screw diameter	30 mm
L/D ratio	23
Maximum hydraulic pressure	210 bar
Mould	Plaque 120x120x2 mm

Feeding zone	195°C (383°F)
Compression zone	200°C (392°F)
Metering zone	210°C (410°C)
Nozzle	210°C (410°C)
Mould temperature	35°C (95°F)

Health and Safety: A safety data sheet on **ESTANE® ETE 90AB3 NAT 01** is available, with all the information related to safety.

Packaging: **ESTANE® ETE 90AB3 NAT 01** 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 Lubrizol should be inspected to assure containers are not damaged during transportation before being stored prior to use. **ESTANE® ETE 90AB3 NAT 01** should be kept in a cool and dry environment prior to being processed. The storage temperature should not exceed 15-25 °C (60-75 °F). Standard practice of consuming resin on first-in first-out basis should be employed.

For further information refer to Lubrizol Advanced Materials processing guides.

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