Technical Data Sheet

Type: Estane® ALR CLC93A-V is a 85-90 Shore A thermoplastic polyurethane (TPU) resin.

Features: Offers excellent color stability upon weather exposure. This high-performance resin is clear, UV resistant, and has excellent mechanical properties. This product provides high quality film and excellent transparency.

Uses: Flat die/ cast film extrusion, outdoor applications, protective films and graphic films.

Physical Properties	Value (Metric)	Unit	Test Method
Hardness (5 sec)	85-90	Shore A	ISO 868 / ASTM D-2240
Specific Gravity	1.10	g/cm3	ISO 2781 / ASTM D-792
Tensile Strength	65 / 9000	MPa / psi	ISO 527-2 / ASTM D-412
Ultimate Elongation	410	%	ISO 527-2 / ASTM D-412
Tensile Stress at:			ISO 527-2 / ASTM D-412
- 100 % Elongation	7 / 1000	MPa / psi	ISO 527-2 / ASTM D-412
- 300 % Elongation	16 / 2300	MPa / psi	ISO 527-2 / ASTM D-412
Melt Flow Index (175ºC, 2.16kg)	1-10	g/ 10 min	ISO 1133 / ASTM D790

• Listed values are typical (Average) values and should/cannot be applied for specification purposes.
• Prior to testing samples were conditioned at 23°C for 24 hours

Supply Form and Standard Packaging

• **ESTANE® ALR CLC93A-V** is supplied in pellet form and packaged in 25 kg bags.

Material Preparation

• Prior to processing, **ESTANE® ALR CLC93A-V** must be dried at 60ºC (140ºF) for 4 hours.
• It is recommended to dry the material in a vacuum or dehumidifying type dryer. Target dew point should be -40°C**.**

Material Preparation

• **ESTANE® ALR CLC93A-V** can be processed on any conventional extruder:

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Recommended EXTRUSION Temperature Profile:

	°C/ºF
Zone 1	165-175ºC / 329-347ºF
Zone 2	175-185ºC / 347-365ºF
Zone 3	175-185ºC / 347-365ºF
Zone 4	185-195ºC / 365-383ºF
Adapter (5)	185-195ºC / 365-383ºF
Die Zone 1 (6)	190-200ºC / 374-392ºF
Die Zone 2	190-200ºC / 374-392ºF

For further information refer to Lubrizol Advanced Materials processing guides.

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