

CNCGLASS

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TECHNICAL NOTE

Which Type of EVA Ethylene Vinyl Acetate Resin For Glass Laminating EVA Film

By Peter Lin

Glass-laminating EVA film is extruded from ethylene-vinyl acetate (EVA) copolymer resin. Understanding the raw-material grade—vinyl acetate (VA) content, melt flow rate (MFR), density, and thermal/mechanical set points—helps fabricators and buyers select a resin suited to hot-melt interlayer sheet for architectural laminated glass or photovoltaic encapsulation, rather than a liquid emulsion or an unrelated foam/cable grade.

CNCGLASS · 1. Why the EVA Resin Grade Matters

EVA interlayer film for laminated glass is not a finished “glue” purchased off the shelf as a liquid adhesive; it is a solid sheet produced by extruding a selected EVA resin (often with additives and a cross-linking package) into film. If the resin VA content, melt viscosity, or softening behaviour is wrong for sheet extrusion and vacuum/heat lamination, the film may process poorly, haze, or fail to wet and bond glass consistently.

For that reason, fabricators who want deeper insight into EVA interlayer performance benefit from knowing the resin raw material behind the film—not only the finished film brand name.



Figure 1. Ethylene-vinyl acetate (EVA) resin pellets — typical solid feedstock form for extrusion into hot-melt adhesive interlayer sheet.

CNCGLASS · 2. Many EVA Types — Which Ones Make Hot-Melt Interlayer Sheet?

Commercial EVA appears in many physical forms and end-use grades: aqueous emulsions and dispersions (liquid), high-MFR hot-melt adhesive pellets, foam/shoe-compound grades, wire-and-cable compounds, packaging films, and dedicated photovoltaic encapsulant resins. Only a subset is designed for extrusion into a continuous sheet that later acts as a hot-melt adhesive interlayer between glass panes—or as a solar-module encapsulant film after formulation and cross-linking.

For extrusion of glass-laminating or encapsulant sheet, industry practice commonly points to solid, pelletised EVA copolymers in the mid-to-high VA band (around 28 wt% VA is widely published for photovoltaic encapsulant resins) with an MFR suited to sheet lines—often roughly the high teens to mid-twenties g/10 min at 190 °C / 2.16 kg on published PV-grade data sheets. The table below records one such indicative resin property set as published in the source briefing.

CNCGLASS · 3. Indicative EVA Resin for Hot-Melt Adhesive Sheet Extrusion

The following typical properties illustrate a solid EVA resin grade aligned with extrusion of hot-melt adhesive film for glass laminating or solar-panel encapsulation. Figures are retained from the source briefing (typical values, not a guaranteed CNCGLASS purchase specification).

Property	Typical value
Vinyl Acetate Content	28 Wt.%
Melt Flow Rate	20 g/10min
Density	0.945 g/cm ³
Vicat Softening Point	44 °C
Melting Point	73 °C
Tensile Strength at Break	26 MPa
Elongation at Break	800 %
Hardness Shore A	45
Brittleness Temperature	< -50 °C
Ring & Ball Softening Point	> 150 °C

Reading the table in process terms: VA ≈ 28 wt% supports flexibility, clarity, and adhesion polarity; MFR ≈ 20 g/10 min indicates a melt viscosity in the sheet-extrusion window rather than ultra-low-viscosity hot-melt or very stiff cable grades; melting ≈ 73 °C and Vicat ≈ 44 °C place the resin in a soft thermoplastic window compatible with vacuum/heat lamination cycles; high elongation and a low brittleness temperature support tough interlayer behaviour after film forming.

CNCGLASS · 4. Architectural Glass EVA vs Solar Encapsulant Resin

Both architectural laminated-glass EVA and photovoltaic encapsulant films often start from high-VA solid resins in a similar VA/MFR neighbourhood. They are not interchangeable finished products.

Architectural / decorative laminated glass. The extruded film is formulated and processed (commonly vacuum-bag heat lamination without an autoclave for many EVA systems) to bond glass for safety, decorative inserts, wet-area, or facade applications. Optical clarity, edge behaviour, adhesion to glass, and process window for the fabricator's oven/vacuum line dominate grade selection.

Solar (PV) encapsulant. Dedicated PV resin grades (examples published by resin makers include ≈28 wt% VA with MFR typically near 18–26 g/10 min) are formulated for module lamination with peroxide cross-linking, long-term UV/thermal stability, electrical insulation, and low potential-induced degradation (PID). Additive packages and contamination (gel) control are specified for module lifetime, not for decorative glass aesthetics alone.

Practical takeaway: ask the film supplier which resin family and VA/MFR band the interlayer uses, and qualify architectural grades with a laminating trial on your own glass and cycle—not by assuming a solar encapsulant pellet will behave identically as a decorative interlayer.

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