

# PVB (POLYVINYL BUTYRAL) SELECTION GUIDE

PVB Resins deliver exceptional adhesion, superior flexibility, and high film clarity to diverse formulations. Due to their outstanding bonding strength on challenging substrates such as metal, glass, wood, and plastics, they are recognized as highly versatile binders.

## Structural Characteristics & Differentiation

The performance variations in PVB resins are primarily determined by their Viscosity (Molecular Weight) and Degree of Butyralization (Acetal Content). These two parameters directly dictate the mechanical strength and solvent solubility of the resin. PVB is synthesized through the acetalization reaction of Polyvinyl Alcohol (PVA) with Butyraldehyde. As a result of this reaction, three functional groups exist on the polymer chain:

**Butyral Groups:** Provide flexibility and water resistance.    **Hydroxyl (OH) Groups:** Enable adhesion and facilitate cross-linking.    **Acetate Groups:** Influence overall solubility.

## Applications & Versatility

PVB resins are ideally suited for critical applications such as Printing Inks (Flexo/Gravure), anti-corrosive Wash-Primers, ceramic binders, industrial coatings and high-performance adhesives.

## Compatibility & Solubility

**Polymer Compatibility:** PVB exhibits excellent compatibility with alkyd, phenolic, epoxy, melamine, and certain polyurethane (PU) resins. This makes it an ideal modifier in hybrid systems.

**Solvent Compatibility:** They are generally compatible with Alcohols (Ethanol, IPA, Butanol), Esters (Ethyl Acetate, Butyl Acetate), and Glycol Ethers. Additionally, they can be modified with aromatic hydrocarbons and ketones to fine-tune drying rates and viscosity.

Technical Segment	Viscosity Range (cps)	Highlight	Application	Solubility
<b>PVB 16 – 18 Series</b>	Low (20-55 cps)	Excellent pigment wetting & high solid content.	Flexo & packaging inks, glass/metal primers	Ideal for Ethyl Acetate rich formulas. Fully soluble in Alcohol/Ester blends.
<b>PVB 20 Series</b>	Low (20-40 cps)	Low viscosity with improved film toughness	Packaging Inks (Gravure/Flexo), Specialty coatings	Excellent flow in Ethanol/IPA; balanced response to Ester additions.
<b>PVB 30 Series</b>	Medium (70-120 cps)	Balanced mechanical strength & adhesion.	Wood Lacquers, Primers, Binders, Industrial coatings	Best in Alcohol/Glycol Eter systems. Ethyl Acetate used as a fast-drying co-solvent.
<b>PVB 60 Series</b>	High (250-350 cps)	Maximum flexibility, impact resistance & peel strength.	Heat-seal Adhesives, Textile coatings, Varnishes, Industrial coatings	Requires Alcohol/Aromatic (Toluene/Xylene) or Ketone (MEK) blends for best stability.