



Polyurethane (PU) adhesive is a versatile polymer-based adhesive used in a wide range of applications requiring strong and durable bonds. These adhesives are known for their excellent resistance to moisture, temperature changes, and chemicals, making them ideal for both interior and exterior projects.

### Key Characteristics of PU Adhesives:

- **Bonding strength:** PU adhesives form extremely strong and long-lasting bonds by penetrating into the micropores of the materials they join. They are considered “structural adhesives”, since they don’t just stick materials together—they become an integral part of the bond.
- **Versatility:** PU adhesives can bond a vast variety of materials, including wood, metal, plastics, stone, glass, concrete, and foam. This makes them valuable across many industries, from construction and furniture making to aerospace and automotive.
- **Flexibility:** Unlike more rigid adhesives (such as epoxies), many PU adhesives offer a degree of flexibility and elasticity. This allows the bond to withstand dynamic loads, vibrations, and expansion or contraction caused by temperature changes without cracking.
- **Water resistance:** Most PU adhesives have excellent water resistance, making them ideal for outdoor applications and areas exposed to moisture.

### Types of PU Adhesives:

#### One-component (1K):

- Ready-to-use.
- Cure by reacting with moisture in the air or in the substrates being bonded.
- Can sometimes expand as they cure, giving them gap-filling properties.
- Commonly used for general-purpose bonding, wood glues, and construction adhesives.

#### Two-component (2K):

- Consist of a resin and a hardener that must be mixed just before use.
- The chemical reaction between the two components causes curing.
- Provide very tough, rigid, or fast-curing bonds, especially for non-porous materials such as metals and plastics.

### Common Applications:

- **Woodworking:** Valued for their strong, moisture-resistant bonds in furniture, laminates, and outdoor wood constructions.
- **Automotive:** Used for bonding vehicle components, trim, and glass.
- **Marine:** Ideal for boat building and repair due to their superior water resistance.

When selecting a PU adhesive, always check the product specifications to ensure it is suitable for the specific materials and application you need.