

What is a Water-based Adhesive

Detail Introduction :

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Water-based adhesives (Water-based Adhesives) refer to the dissolving of water-soluble macromolecules in an aqueous solution of appropriate concentration or the dispersion of insoluble macromolecules in water under the action of surfactants into microparticles (emulsion). A general term for adhesives; in simple terms, adhesives made of materials that can be dispersed or dissolved in water are water-based adhesives, often referred to as water-based adhesives.

Water-based adhesives can be divided into the following categories:

- Aqueous solution type, such as starch or dextrin, cellulose and protein natural adhesives, polyvinyl alcohol, phenolic resin, urea-formaldehyde resin, melamine resin, and other synthetic adhesives;

- Emulsion type or water dispersion type, such as PVAc, EVA emulsion, polyacrylate emulsion, epoxy resin emulsion, styrene-butadiene, nitrile, chloroprene latex, polyurethane emulsion, etc.;

- Aqueous dispersion, such as water-based reclaimed rubber or butyl rubber.

Water-based adhesives can be said to be the oldest type of adhesives. Humans have a long history of using water-based adhesives. My country has begun to use water-based adhesives thousands of years ago, such as mixing clay and starch with water. Bondstones, use bone glue and fish glue to bond armor, scabbard, etc. There are many water-based adhesives made from latex. The initial latex refers to the natural rubber latex dispersion from rubber trees. These early water-based adhesives are almost all-natural materials. The industrial production of natural adhesives is a modern event. The United Kingdom established a factory for the industrial production of natural adhesives in 1700; the United States built the first adhesive factory in 1808 to produce bone glue and soybean protein glue.

Natural adhesives have been used for thousands of years, but due to their low bonding strength, poor water resistance, temperature resistance, aging resistance, and medium resistance, their use has been greatly limited. With the emergence of synthetic polymer compounds, people began to develop various synthetic resin adhesives for various bonding occasions, and these natural water-based adhesives were gradually replaced. It was not until the early 20th century that water-based adhesives developed rapidly, starting with the invention of phenolic resin in the United States and the discovery that it could be used as an adhesive for making plywood.

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