

The Development History of Hot Melt Adhesive

Detail Introduction :

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Hot melt adhesive (Hotmelt Adhesive, referred to as hot melt adhesive) refers to a solid state at room temperature and a viscous liquid state after heating and melting. Adhesive for bonding. It is made of thermoplastic material as the base material, adding a small amount of tackifier, flow modifier, plastic filler, anti-aging agent, etc., and is made by melting and mixing. It has the characteristics of rapid curing, no pollution, and no pollution, so hot melt adhesives enjoy the reputation of "green adhesives."

Hot melt adhesive has a very long history. The earliest people used natural materials such as asphalt, and rosin to melt and bond utensils. These materials can be called natural hot melt adhesive. Due to shortcomings of low strength, these materials have not been widely used until the emergence of poly composite materials; hot melt adhesives have broad prospects for development. The earliest research application of synthetic hot melt adhesive is a thermoplastic polyethylene resin. Although polyethylene is a non-polar polymer and has poor adhesion, due to mechanical effects such as embedding and rivets, to porous bond materials such as wood, paper, and cloth. There is also a certain adhesive force, and polyethylene is cheap, so it has been applied in some fields. With the continuous improvement of the performance requirements of hot melt adhesives, polyester (PES), polyamide (PA), styrene-butadiene block copolymer (SBS), ethylene-vinyl acetate copolymer (EVA), Polyurethane (PU), and other hot melt adhesives have been developed one after another.

In the late 1950s, synthetic hot melt adhesives began to be used in the packaging industry. In the 1960s, hot melt adhesives were widely used in corrugated cardboard manufacturing, corrugated box forming, and bag manufacturing. In the 1970s, the environmental pollution in European and American countries became more and more serious, and the environmental protection requirements for adhesives became more and more strict. Hot melt adhesives became popular in Europe and the United States and were deeply loved in printing (bookbinding, etc.), clothing, shoemaking, decoration, furniture, and other industries. With the emergence of thermoplastic rubber in the 1970s led to the development of hot-melt pressure-sensitive adhesives in tapes and labels; in the mid-1980s, reactive hot-melt adhesives appeared. Due to the unique advantages of hot melt adhesive itself, it has incomparable advantages compared with other types of adhesives and has become one of the fastest-growing types of adhesives.

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