

What Direction Will Hot Melt Adhesive Develop in the Future

Detail Introduction :

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Hot melt adhesive generally uses hot melt adhesive gluing equipment to melt hot melt adhesive part liquid and then deliver it to the surface of the adherend by spraying or coating. The bonding can be completed after the hot melt adhesive has cooled down.

Hot melt adhesive has many advantages, and high efficiency is the most prominent. The whole bonding process of hot melt adhesive can be completed in 1-3 seconds. Hot melt adhesive has a good bonding and high bonding strength. It can also enhance the strength of some materials whose strength is not high. The use of hot melt adhesive does not generate waste and meets environmental protection requirements.

Hot melt adhesive is a solvent-free, water-free, 100% solid-soluble polymer product. It is a solid at room temperature, heated and melted to a certain extent, and becomes a flowable and viscous liquid adhesive which is light brown translucent or white after melting.

In the future, under the trend of globalization of the hot melt adhesive industry, the demand will be more diversified, and the gradually large-scale hot melt adhesive enterprises will have enough strength to do basic research so as to gain advantages in the market with serious product homogeneity. Therefore, development of technology is almost inevitable.

1. High strength hot melt adhesive

Adhesive strength is the core performance of adhesives. Hot melt adhesives must be used on some occasions with extremely high strength requirements, especially those under large structural stress, and the adhesive strength must be improved.

Strong polarity and good wettability are the characteristics of adhesives to achieve high bond strength. Hot melt adhesives have no solvent, and fluidity and wettability are the shortcomings. Improving the bond strength of hot melt adhesives is mainly from hot melt adhesives of polarity and wettability.

2. High-speed hot melt adhesive

The high efficiency of hot melt adhesives is recognized because as long as the hot melt is cooled, it has formed a bond. The bonding speed of cigarette holder sticks can reach 20,000 pieces/min, bookbinding can reach 18,000 pieces/hour, and diaper production can reach 1,000 pieces/min.

In the future, it is possible to further improve the application speed of hot melt adhesives and expand their application advantages, mainly from the aspects of accelerating the hardening speed, increasing the thermal viscosity, reducing the specific heat of the material, and optimizing the equipment.

3. Low-temperature hot melt adhesive

Sizing temperature is one of the top concerns for materials engineers. Low sizing temperature can not only reduce material damage, extend equipment life, save energy but also reduce the public welfare effect and carbon emissions. Therefore, low-temperature hot melt adhesives are definitely a promising research direction.

4. Low-density hot melt adhesive

In many cases, reducing material density to achieve lightweight has many advantages, such as reducing energy consumption and saving resources. The bond strength of the adhesive actually depends on the contact area, not the weight of the adhesive itself, so low-density hot melt adhesives become a reliable research direction.

Low density can be achieved not only by increasing the density of the material (such as using polyolefin feedstocks) but also by manufacturing processes, such as foamed hot melt adhesives.

5. In the context of people's increasing concern about health, especially in industries such as automotive, hygiene materials, food, toys, furniture, etc., odourless hot melt adhesives are the best products to reduce the anxiety of end consumers.

Odourless should be achieved by improving raw materials, minimizing small molecules, and using low molecular weight or even odourless raw materials, such as hydrogenated rosin esters.

6. Materialized hot melt adhesive

Using a special moulding process, the hot melt adhesive is made into a film, mesh, strip, and linear material, which will become the development trend of hot melt adhesive. Today, the market of hot melt adhesive mesh film, hot melt adhesive tape and hot melt adhesive line is developing rapidly. The combination of this hot melt adhesive material and other materials is more conducive to downstream enterprises to achieve large-scale production and cleaning production.

7. Degradable hot melt adhesive

Environmental protection is a major trend, and environmental protection is also a relative concept. As hot-melt adhesives belong to environmental protection adhesives, they are limited to environmental protection that is harmless to the human body, not environmental protection in terms of recycling or degradability. In the future, if hot melt adhesive products that are easy to recycle or degrade naturally are developed, there will be good development prospects.

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