

Selection of adhesives

1. What material select to bond?

As the wide variety of adhesives, complex using method and combination conditions, the adhesive selection is more complex than imagined. However, among which people always overlook is whether the material would really bond with each other. People may have had the experience that while adopting low-cost polyethylene components to reduce costs, end with choosing more expensive parts because the component failed to bond. Before the selection of the adhesive we need to explore the nature of the bonding material first.

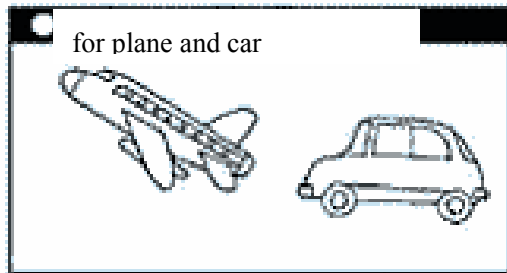
	Bonding difficult material	Material hard to bond
plastic	Polyethylene	Polyacetal
	Polypropylene	Nylon
	Teflon etc.	All kinds of engineering plastics etc.
rubber	Fluorinated rubber	Silastic rubber
	Butyl rubber etc.	EPDM Poly ester rubber
		TPE etc.

2. Purpose

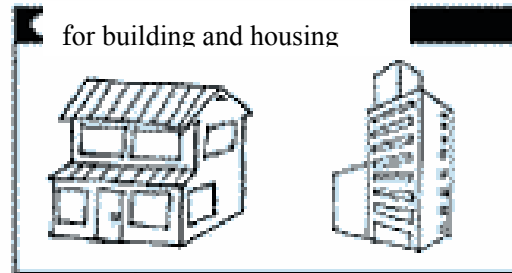
What's the purpose and when using the adhesive? The type of adhesive used differently according to difference use purpose such as strong structural bond, temporary adhesive joints, filling adhesive and a coating material. i.e., if it is the metal construction bonding with force conduction, it would become meaningless if you do not choose the elastic adhesive to absorb the ease force. Choose the adhesive with low viscosity under using filling adhesive, but when in the vertical plane the high viscosity adhesive should be used. The basic character and nature should be fully considered when select the adhesive with qualified for the purpose, and usage.

Choose according to different usage

To make choice according to the purpose

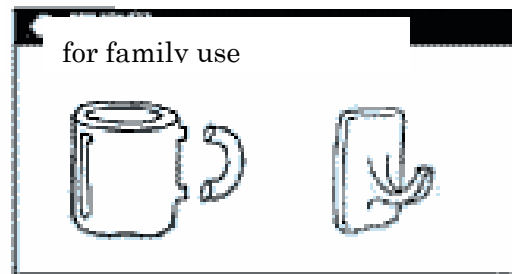
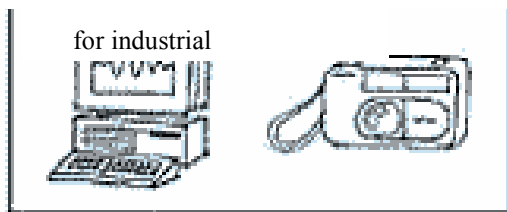


Applied to metal, construction, hardening while heating, high hardness, heat resistance



Applied to concrete, wood, hardening under room temperature, low-cost, operation, water resistance

Applied to plastic, rubber, fast hardening, high hardness, complete, function, for the industrial manufacturing



Multi-purpose, easy to use, rapid hardening

3. Conditions after bonding

Choose the suitable adhesive according to the bonding material's adhesion, purpose, use, and consider what kind of condition we might meet. Choose the corresponding adhesive with fully consideration, if it contact with water and pharmacy regularly, or expose to high temperature, or withstand vibration and other conditions. Instant adhesive must be used if bearing 200 kg shear bond strength and suffered shock outside the house.

Durability

Example: hot and cold test, water test etc.

Durability	Adhesive system
good ↑	flexible
	Thermosetting resin
	Elastic fiber

↓ bad	Thermoplastic resin
	Instant bonding Hot-melt Emulsion (Excluding wood)

4. Bond conditions

So far we talked about three main factors among the absolute terms as choosing adhesive, and correctly set the coated and bonded conditions in consistent with the selected adhesive, but the reality requires the priority given to consider the productivity and existing production lines. Therefore, the adhesive selection should be based on the limited hardening speed, painting methods, mechanical flexibility, safety and hygiene conditions.

The initial hardening rate	
Hardening speed	Adhesive system
Fast ↑	Instant adhesive
	Hot-melt
↓ slow	2. liquid hardening resin under room temperature Thermosetting resin
	Elastic fiber
	Thermoplastic resin Flexible Emulsion type (Excluding wood)

5. Expenses

The basic function of adhesive is to bond the object together to generate new value items. Therefore, the price can not be judged by per kilogram, and should be considered by reliability, operation, safety, substance use amount, design freedom scale and bonding material added value.

So, if follow these principles to choose the adhesive, then please select the adhesive and try!

Expense comparison		
/kg	Adhesive system	Solid type
High ↑	Instant adhesive	100%
	Elastic	100%
	2 liquid hardening resin under room temperature	100%
	Thermosetting resin	80~100%
	Hot melt	100%
	Plastic fiber	30~50%
	Thermoplastic resin	20~70%
↓ low	Emulsion	30~70%