

Structural Adhesive

J-27H high temperature Resistance adhesive with hardener

Two component epoxy adhesive

Description

J-27H Epoxy adhesive of high temperature Resistance is a two-component modified liquid epoxy adhesive curing at 180 °C. When fully cured the adhesive will have high temperature Resistance, high shear strength. It is suitable for bonding, sealing and plugging heat-resistant parts at high temperature. It is widely used for bonding non-metallic materials (such as graphite products, ceramic products,) to metal, and also metal to metal. It can be used during 60 ~ 232 °C for a long-term.

1. Specification

Main Ingredients: Modified epoxy

Appearance: Part A(modified epoxy) is translucent light yellow viscous liquid

Part B(hardener) is light-yellow solid.

Typical product data:

Temperature	20°C	200°C	232°C
Shear strength, MPa \geq	19.8	14.8	8.2

* Adhesion material is LYI2CZ Aluminum Alloy, the surface was treated by oxidation process after being polished.

Bonding properties of different materials:

Materials	Aluminum Alloy	Titanium Alloy	45 # steel	Carbon fiber
20 °C shear strength, MPa	20.9	20.4	21.2	14.3*

"*" For the material damage

Performance of resistant to wet and heat.

Hygrothermal aging time, h	0	200	400	600	800	1000
shear strength at 20 degree C, MPa	20.9	21.1	21.9	23.1	22.8	21.8

* Temperature: 55°C±2°C, relative humidity 98%~100%

heat-resistant properties

Thermal aging time, h	0	100	200	300	400	500
shear strength at 20 degree C, MPa	20.9	21.1	21.8	22.1	22.4	21.2

*Temperature: 200°C±2°C

Properties of media resistance

Media	Blank	YH-10	RP-3	Water	artificial sea water	Acetone	4050
Soaking time, d	—	7	100h(70°C)	30	30	7	100h(100°C)
Shear strength, (20 degree C) MPa	20.9	21.1	20.3	21.4	21.2	21.9	19.8

2. Processing**2.1 Pretreatment of joint surface**

- Aluminum Alloy (LY12CZ)

After degreasing by Trichlorethylene steam bath, rough the surface by using 80 mesh sandpaper, treat with chromic acid for 10 minutes at 60 ± 5 °C for 10 minutes, Clean surface with water and dry at 60 ± 5 °C. The bonding part should be used out within eight hours. The surface also can be treated by chromic acid or phosphoric acid anodized .

- Stainless steel, carbon steel

Blow the surface after degreasing by Trichlorethylene steam bath.

- Graphite products, ceramics, carbon fiber products

Roughing the surface by sandpaper before bonding.

2.2 Refining adhesive

Mixing proportion: A:B=100:40 (by weight)

Resin and hardener should be blended until they form a homogeneous mix.

The adhesive should be used out during 8 hours after mixing at room temperature.

2.3 Adhesive dispensing

On the treated dry and clean bonding surface, spread a thin layer of J-27H on the surface.

The usage of J-27H is 250~300g/m². A syringe can be used for dispensing. Please note not to let air come into adhesive.

During dispensing process, wipe the glue tumor immediately once it overflows from the bonding joints.

2.4 Curing

After dispensing process, J-27H could be cured immediately. The joint components should be assembled and clamped as soon as the adhesive has been applied. An even contact pressure throughout the joint area will ensure optimum cure. Electric blanket, oven, autoclave, infrared light or radar-type heater, as well as other appropriate heating methods, could be used for curing. Curing temperature is 180°C for two hours.

After the about drying process, wait till room temperature, take out the workpiece and let it naturally aged for at least 24 hours.

3.Application

Space industry:

- It has been used for bonding some parts in WS9 engine.
- Bonding graphite products, ceramics to metals in engine.

Civil field:

- Used for bonding and potting a variety of heat-resistant materials, such as graphite products, ceramics, metals and carbon fiber.)

4.Packing

A, B two parts packed respectively in 1kg iron drum.

Outside packing: Cartons or boxes.

5.Transport

J-27H is solvent free adhesive. It is not considered hazardous and therefore is not regulated by DOT or IATA.

6. Storage

Keep in a cool, dark, dry place.

Keep away from heat.

J-27H and hardener may be stored for up 1 year at room temperature provided that the components are stored in sealed containers.

7. Caution

Our product are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming in contact with skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by wash with soap and warm water. The use of solvents is to be avoided. Disposable paper-not cloth towels-should be used to dry the skin. Adequate ventilation of the working area is recommended.

NaBond Technologies Co., Limited
