ThreeBond

Technical Data

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Three Bond Co., Ltd.

ThreeBond 1220G

Silicone adhesive sealant for electric and electronic equipment

1. Outline

ThreeBond 1220G is a one-part room temperature curing silicone adhesive sealant for electric and electronic equipment.

It is a quick-curing dealcoholized sealant, and it excels in surface curability and thick film curability.

The content of low-molecular siloxane which can cause contact failure is reduced.

Hereinafter, ThreeBond is abbreviated to TB.

2. Features

(1) Since it is dealcoholized, it has no corrosive influence on metallic or plastic parts.
(2) High curing speed and excellent thick film curability
(3) Excellent heat and cold resistance
(4) Reduced content of low-molecular siloxane (D_4-D_{10})

3. Uses

Securing of PCB components, sealing of connectors, insulating sealing of electric apparatuses and moisture-proof coating of devices

4. Properties

Table 1 Properties of TB1220G

Test item	Unit	Property	Test method	Remarks
Appearance	-	White opaque	3TS-201-02	
Viscosity	Pa·s	65	3TS-210-02	BH-No.7 20 rpm
Tack-free time	min	10	3TS-219-04	25°C·50%RH

5. Characteristics

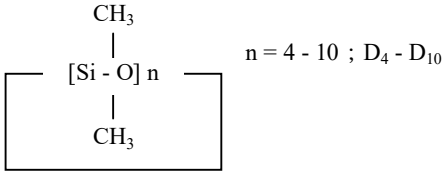
5.1 Characteristics of cured sealant

Table 2 Characteristics of TB1220G after curing

Test item	Unit	Characteristic	Test method	Remarks
Hardness	-	20	3TS-215-01	Durometer A
Tensile strength	MPa	2.2	3TS-320-01	
Elongation	%	500	3TS-320-01	
Specific gravity	-	1.03	3TS-213-03	
Content of low-molecular siloxane D_4-D_{10}	ppm	200	Gas chromatography	

Curing conditions: 25°C, 50%RH for 3 days

Low-molecular siloxane



5.2 Thick film curability

Table 3 Thick film curability of TB1220G

Leaving time	Unit	Characteristic	Test method	Remarks
30 min	mm	0.5	3TS-222-94	
1 h	mm	0.7	3TS-222-94	
2 h	mm	1.0	3TS-222-94	
3 h	mm	1.3	3TS-222-94	

Curing conditions: 25°C, 50%RH

5.3 Electrical characteristics

Table 4 Electrical characteristics of TB1220G

Leaving time	Unit	Characteristic	Test method	Remarks
Dielectric constant	-	2.6	3TS-405-01	1 MHz
Dielectric loss tangent	-	0.0006	3TS-405-01	1 MHz
Dielectric breakdown strength	kV/mm	25	3TS-406-02	
Volume resistivity	Ω·m	2.0E + 13	3TS-401-01	

Curing conditions: 25°C, 50%RH for 3 days

5.4 Tensile shear bond strength

Table 5 Tensile shear bond strength of TB1220G

Tested material	Unit	Characteristic	Test method	Remarks
Aluminum	MPa	1.0	3TS-301-23	
Stainless steel	MPa	1.2	3TS-301-23	
Iron	MPa	1.2	3TS-301-23	
Copper	MPa	1.4	3TS-301-23	
Glass	MPa	1.2	3TS-301-23	
Phenolic resin	MPa	1.3	3TS-301-23	
Epoxy resin	MPa	1.4	3TS-301-23	
Polyester glass	MPa	1.0	3TS-301-23	
Acrylic resin	MPa	1.3	3TS-301-23	
Polyethylene terephthalate	MPa	1.3	3TS-301-23	
Polybutylene terephthalate	MPa	1.0	3TS-301-23	
Polyphenylene ether	MPa	1.2	3TS-301-23	
Polyphenylene sulfide	MPa	1.4	3TS-301-23	
Polycarbonate	MPa	1.4	3TS-301-23	
Nylon 6,6	MPa	1.4	3TS-301-23	
ABS resin	MPa	1.4	3TS-301-23	

Curing conditions 25°C, 50%RH for 7 days

6. Usage

(1) Completely remove moisture, oil and other contaminants from the parts to be bonded.

(2) For more information, contact one of our sales engineers.

7. Instructions for use

(1) This sealant is harmful to the health. Do not inhale or drink it.

(2) Direct contact with the sealant can cause skin inflammation. Use protective clothings.

(3) Keep it out of reach of children.

(4) If it gets in the eyes, wash them with clean water for more than 15 minutes, and get medical attention.

(5) If any abnormality is found in the body, stop using the sealant, and get medical attention.

(6) If it adheres to the skin, sufficiently wash the skin with water or soap and water.

(7) If it is swallowed, do not induce vomiting. Immediately rinse the mouth, and get medical attention.

(8) Before using it, sufficiently confirm whether the method and purpose of use are appropriate.

(9) Provide the area where the product is used with a local exhaust system.

(10) Ascertain in advance whether or not it affects the parts to be bonded with it. If any problem occurs, do not use it.

(11) This product is an insulating material. Take care that it does not adhere to electric contacts.

(12) It contains harmful components. Do not use it for drinking water or hot water supply piping.

(13) For hazard and toxicity information not mentioned herein, see the material safety data sheet (MSDS).

8. Storage

(1) Store the product in a dry place at -5 to 25°C avoiding direct sunlight.

(2) After using it, store it with the cap tightly fitted to prevent deterioration or entry of foreign matter.

9. Disposal

(1) Treat the empty container as industrial waste.

(2) Have the product disposed of by a waste disposer with specialized expertise.

10. Cautions

For industrial use only	(Do not use it for household products.)

This product has been developed for general industrial use. Before using it, you must accept the following terms.

- The technical data given herein are not guaranteed values, but examples of experimental values obtained by our specified test methods. We do not guarantee that the uses introduced herein do not conflict with any intellectual property right.
- Users are asked to evaluate the validity and safety of the use of the product for the relevant purpose prior to use and bear all responsibilities and hazards involved in its use.
  Never use the product for medical implants that will be implanted or injected into the body or may be left in the body.
- We are not liable for personal injury or property damage caused by improper handling of this product.
  If the properties and use of the relevant product are unknown, never use it.
- For detailed information on safety of the product, see the material safety data sheet (MSDS).
  To obtain the MSDS, contact our sales department or customer service office.

- This document is subject to change at our discretion.
- When exporting it to any EU country, consult with one of our sales representatives.