ThreeBond

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ThreeBond Co., Ltd.

Technical Data

ThreeBond 3955

Quick curing, two-part, room temperature-curing, elastic adhesive

1. Outline

ThreeBond 3955 is an acrylic-based, two-part, room temperature setting, elastic adhesive. Upon mixing the two-part liquid together, this product can cure quickly without using special equipment. After curing, the adhesive has a rubber-like elastic body with excellent thermal and moisture resistance.

(Hereinafter, ThreeBond is abbreviated to TB.)

2. Features

(1) No need for special curing equipment and easy to use.
(2) Fast-curing
(3) After curing, has a rubber-like elastic body with excellent thermal and moisture resistance.

3. Uses

Bonding and fixing of various car electrical components, sensors and motors.

4. Properties

Table 1 Properties of TB3955

Item	Unit	Agent A	Agent B	Test method	Remarks
Appearance	-	Light transparent blue	Light transparent yellow	3TS-201-01	
Viscosity (at 25°C)	Pa·s	2.4	2.4	3TS-210-10	Shear rate: 38.3 1/s
Specific gravity (at 25°C)	-	1.04	1.04	3TS-213-02	
Mixing ratio	-	100	100	-	Capacity ratio

5. Cured properties

5.1 Cured adhesive properties

Table 2 Characteristics of TB3955 after curing

Test item		Unit	Result	Test method	Remarks
Hardness		-	A65	3TS-215-01	Durometer A
Elongation		%	130	3TS-320-01	Dumbbell No.3
Tensile strength		MPa	5.2	3TS-320-01	Dumbbell No.3
Tensile shear bond strength		MPa	6.6	3TS-301-13	Fe / Fe (SPCC,SD)
			6.2		SUS/ SUS (SUS-304)
Cure shrinkage		%	0.9	3TS-228-01	20φ
Glass transition point		°C	-45	3TS-501-04	DMA method, 1 Hz, E" peak
Linear expansion coefficient	α_1	ppm/°C	66.0	3TS-501-05	-100- -70
	α_2		221.5		0-50

Curing conditions: 25°C for 24hrs

5.2 Dependence of tensile shear bond strength on curing time

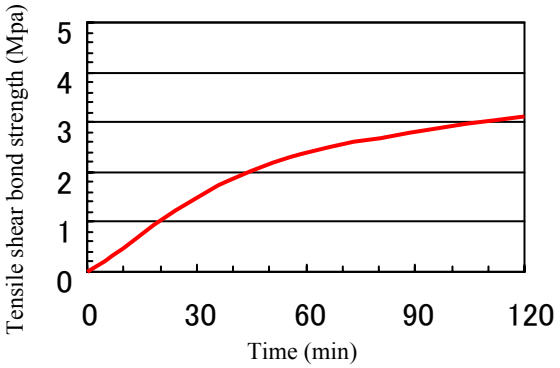

Fig. 1 Curing time <0 to 120 min>

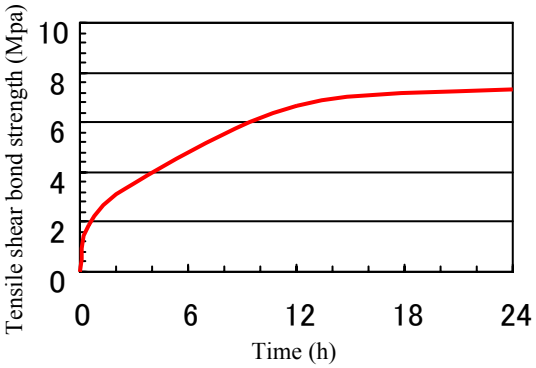

Fig. 2 Curing time <0 to 24 hrs>

Curing conditions: 25°C for 24hrs
Substrate: Fe/Fe SPCC, SD

5.3 Thermal resistance

Table 3 Thermal resistance of TB3955

Test item	Unit	Result	Test method	Remarks
Hardness	-	A72	3TS-215-01	Durometer A
Elongation	%	120	3TS-320-01	Dumbbell No.3
Tensile strength	MPa	5.8	3TS-320-01	Dumbbell No.3
Tensile shear bond strength	MPa	8.8	3TS-301-13	Fe / Fe (SPCC,SD)
		8.1		SUS / SUS (SUS-304)

Curing conditions: 25°C for 24hrs
Test conditions: 120℃ for 168 hrs

5.4 Moisture resistance

Table 4 Moisture resistance of TB3955

Test item	Unit	Result	Test method	Remarks
Hardness	-	A68	3TS-215-01	Durometer A
Elongation	%	125	3TS-320-01	Dumbbell No.3
Tensile strength	MPa	5.4	3TS-320-01	Dumbbell No.3
Tensile shear bond strength	MPa	7.4	3TS-301-13	Fe / Fe (SPCC,SD)
		6.8		SUS/ SUS (SUS-304)

Curing conditions: 25°C for 24hrs
Test conditions: 85°C, 85%RH, for 168 hrs

6. Usage method

(1) Remove oil, moisture and other contaminants completely from the surfaces to be bonded.
(2) Mix the agents A and B at a ratio of 1:1 (capacity ratio). Chemical reaction will start just after they are mixed. Mix the agents in amounts to be used within the pot life (5 minutes).
(3) After mixing, apply the adhesive uniformly. Then, immediately bond the parts, and secure them with a jig.
(4) At room temperature (25°C), the adhesive will reach the practical strength (50% of the final strength) after 3 to 4 hours.

7. Usage precautions

(1) Harmful to health. Do not touch directly nor inhale fumes.
(2) If any abnormality to body is found, stop using and get medical attention. Persons with allergies or sensitive skin should avoid using it.
(3) Do not use near fire.
(4) Contains harmful components. Do not use for drinking water or supply water pipes.
(5) Use and store this product out of reach of children.
(6) Before using, sufficiently confirm whether the method of application and the purpose of use are appropriate.
(7) When handing, wear suitable protective equipment (respirator, safety glasses, protective gloves and protective clothing). And use a local exhaust system.
(8) Harmful to health. Do not inhale or swallow. If swallowed, get medical aid immediately.
(9) If in eyes, immediately rinse with clean water for at least 15 minutes and seek medical attention. If on skin, may cause inflammation. If on skin, immediately wipe away with cloth or paper, and wash the skin with soap and water.
(10) Do not return unused product to the container. The unused product should be disposed.
(11) The product solidifies on metallic parts. Do not use with metallic nozzle or other metallic parts.
(12) For hazard and toxicity information not mentioned in this document, read the Material Safety Data Sheet (MSDS).

8. Storage

To prevent deterioration and contamination, seal the cap tightly on each container, and store the product in a dark dry place at -5 to 25°C and avoid direct sunlight.

9. Disposal

Dispose product as industrial waste.

10. Cautions

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

This product has been developed for general industrial use. Before using the product, the user must accept the following conditions.

- The technical data described in this report are based on our company's test method specifications. These values do not represent guaranteed values. Also, there are no guarantees that the uses presented in this report do not infringe on any third party's intellectual property rights.
- Regarding safety validation, the user bears all responsibilities and risks associated for confirming prior to use. Absolutely do not embed this product into body by injection or as residue from medical implant applications.
- ThreeBond accepts no responsibility for injuries and damages caused by improper handling of this product. If the user is uncertain about the properties of this product and/or how to use it, absolutely do not use.
- For more information about product safety information, read this product's Material Safety Data Sheet (MSDS).
  To obtain the MSDS, contact our sales office or our customer service.
- Three Bond reserves the right to modify this report at our own discretion.