ThreeBond

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Three Bond Co., Ltd.

Technical Data
ThreeBond 1156C
Single-component heat curable acrylic sealant

1. Product description

ThreeBond 1156C is a single-component heat curable acrylic sealant. It cures quickly and after curing, it becomes a rubber-like elastic body excelling in heat resistance and chemical resistance.

Hereinafter, ThreeBond is abbreviated as TB.

2. Features

(1) Heat curing in a short time (30 min at 150℃)
(2) Excellent heat resistance and chemical resistance
(3) Suitable for moderate thixotropic potting applications

3. Applications

Sealing and potting of parts requiring heat resistance and chemical resistance

4. Properties

Table 1 Properties of TB1156C

Test item	Unit	Property value	Test method	Remark
Appearance	-	Black	3TS-2100-002	-
Viscosity (at 25°C)	Pa･s	380	3TS-2F00-007	$2.0s^{-1}$
Specific gravity (25°C)	-	1.24	3TS-2500-002	-
Structural viscosity ratio (25℃)	-	1.5	3TS-4200-005	$1s^{-1}/10s^{-1}$

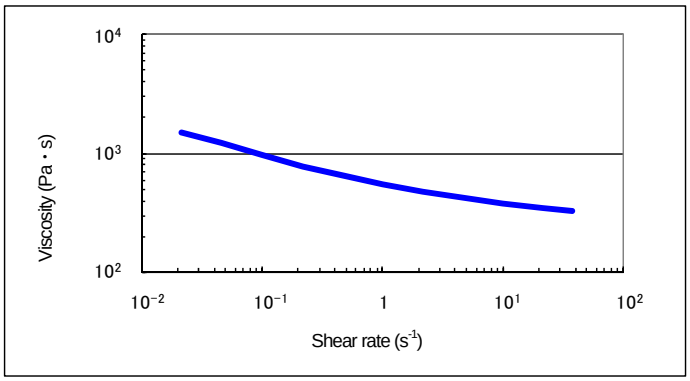

Figure 1. Flow curve of TB1156C (25℃)

Test method: 3TS-4200-005 Geometry: C 25 4 Measuring interval: 1s
Shear rate: 10-2 ・102 s-1 Delay time: 1 - 121s Integration time: 10s

5. Characteristics

5.1 After cured properties

Table 2 Characteristics of TB1156C after curing

Test item	Unit	Property value	Test method	Remark
Hardness	-	A15	3TS-2B00-004	-
Figure 7. Heat resistance (Tensile strength of TB1533 while heated)	MPa	1.7	3TS-4190-001	-
Elongation	%	300	3TS-4190-001	-
Lap shear strength	MPa	1.8	3TS-4100-023	Al/Al*

Curing conditions:150°C×90min（Hardening jig heat capacity: +60 分）
Adhesion thickness: 1 mm　Test piece: A1050P

5.2 Heat resistance

Table 3 Heat resistance of TB1156C

Test item	Unit	Property value	Test method	Remark
Hardness	-	A25	3TS-2B00-004	-
Figure 7. Heat resistance (Tensile strength of TB1533 while heated)	MPa	2.2	3TS-4190-001	-
Elongation	%	230	3TS-4190-001	-
Lap shear strength	MPa	2.4	3TS-4100-023	Al/Al*

Curing conditions:150°C×90min（Hardening jig heat capacity: +60 分）
Test conditions: 150°C for 240 hrs
* Adhesion thickness: 1 mm　Test piece: A1050P

5.3 Chemical resistance

Table 4 Chemical resistance of TB1156C

Test item	Unit	Property value	Test method	Remark
Hardness	-	A27	3TS-2B00-004	-
Figure 7. Heat resistance (Tensile strength of TB1533 while heated)	MPa	2.1	3TS-4190-001	-
Elongation	%	215	3TS-4190-001	-
Lap shear strength	MPa	1.8	3TS-4100-023	Al/Al*

Curing conditions:150°C×90min（Hardening jig heat capacity: +60 分）
Test conditions: 150°C for 240 hrs　Chemical used: AT oil
* Adhesion thickness: 1 mm　Test piece: A1050P

5.4 Electrical characteristics

Table 5 Electrical characteristics of TB1156C

Test item	Unit	Property value	Test method	Remark
Dielectric constant	-	6.1	3TS-5220-001	1MHz
Dielectric dissipation factor	-	0.089	3TS-5220-001	1MHz
Dielectric breakdown strength	kV/mm	19	3TS-5230-002	-
Volume resistivity	Ω･m	1.0×10^{10}	3TS-5200-001	-

Curing conditions:150°C×90min（Hardening jig heat capacity: +60 分）

6. Curability

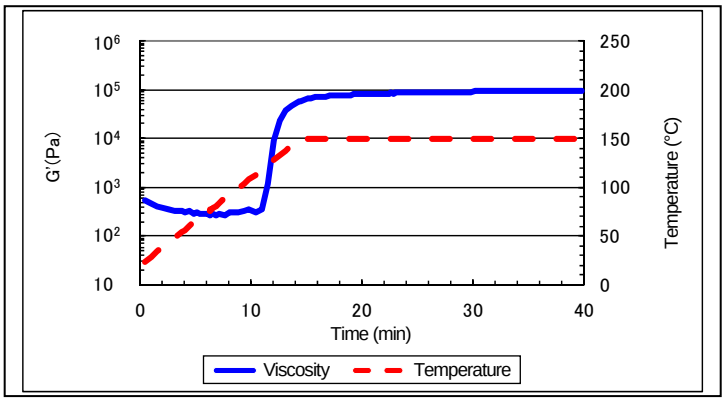

Fig. 2 Curing ability of TB1156C (150℃)

Test method: 3TS-4200-007
Geometry: φ25(Al)　Gap: 1 mm　Frequency: 1.0 Hz　Distortion: 0.1%

7. Usage

(1) Application
Use a cartridge gun or an automatic applicator.

(2) Curing
After applying the sealant, heat and cure it using a hot-air curing oven.
Determine the curing conditions in consideration of the heat capacity of the coated area and the heating method. (Standard curing conditions: 150°C for 30 min)

8. Usage precautions

(1) This product is harmful to the health. Do not touch it directly or inhale its vapor.
(2) Persons who have allergies or sensitive skin should avoid using it.
(3) Combustible. Keep away from fire.
(4) Keep out of reach of children.
(5) If in eyes, rinse with clean water for over 15 minutes, and get medical attention.
(6) Do not use the sealant for purposes other than industrial purposes.
(7) To prevent dew condensation, unseal the container after it returns to room temperature.
(8) Before using, sufficiently confirm whether the method of application and the purpose are appropriate.

(9) Some materials may deteriorate if this product is used. Ascertain in advance whether or not it affects the parts to be sealed with it. If any problem occurs, do not use it.
(10) Do not dilute or mix the product with any organic solvent or any other substance.
(11) Do not pour the product into other containers. Do not return the product left unused to its container. Doing so can deteriorate its quality.
(12) Note that curing failure may be caused if the sealant is brought into contact or mixed with substances, such as water, sulfur, phosphorus, nitrogen compounds and organic metal salts, which may become catalytic poisons.
(13) For hazard and toxicity information not mentioned herein, see the material safety data sheet (MSDS).

9. Storage

To prevent deterioration and contamination, seal the cap tightly. Store in a dark dry place at -5 to 10℃ avoiding direct sunlight.

10. Disposal

Do not burn the product. It may generate toxic gas when burnt.
Ask an authorized industrial waste disposal firm to dispose of the product as industrial waste.

11. Cautions

For Industrial Use Only (Do not use as a household product)

This product is developed for general industrial use. Before using this product, the user must accept the following terms.

- The technical data given herein are an example of experimental values obtained by our specified test method, and are not guaranteed values. Furthermore, we do not guarantee that the uses described herein do not conflict with any intellectual property right.
- Users are asked to examine whether the product is appropriate to the purpose of use and can be used safely before they use it and bear all responsibilities and hazards involved in its use. Never embed or inject into bodies nor use as a medical implant that 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 usage of this product are unknown, do not use.
- For detailed safety information of the product, see the Material Safety Data Sheet (MSDS). To obtain the MSDS, contact our sales department or customer service office.
- Information in this document is subject to change at our own discretion.