

ThreeBond

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ThreeBond Co., Ltd.

Technical Data

ThreeBond 1211

One-component, RTV silicone-based sealant

1. Product description

ThreeBond 1211 is a room temperature vulcanizing (RTV), one-component silicone-based sealant.

After curing, the sealant becomes a rubber-like elastic body excelling in heat resistance, cold resistance, oil resistance and water resistance.

Hereinafter, ThreeBond is abbreviated to TB.

2. Features

- (1) Excellent adhesion to metals (aluminum, steel, etc.).
- (2) Excellent heat resistance and cold resistance.
- (3) Fluid and easy to use.

3. Applications

Sealing of flange surfaces and threaded portions, and use with solid seat gasket

4. Properties

Table 1 Properties of TB1211

Test item	Unit	Result	Test method	Remarks
Appearance	-	White	3TS-2100-002	-
Viscosity	Pa·s	70	3TS-2F00-002	25°C, BH-type, No.7, 20 rpm
Specific gravity	-	1.01	3TS-2500-002	25°C
Tack-free time	min	40	3TS-3130-005	*1

*1 Environmental conditions: 23°C, 50%RH

5. Characteristics

5.1 Characteristics of cured resin

Table 2 Characteristics of TB1211 after curing

Test item	Unit	Result	Test method	Remarks
Hardness	-	A26	3TS-2B00-004	*1
Elongation	%	300	3TS-4190-001	*1, Thickness: 2 mm
Tensile strength	MPa	2.5	3TS-4190-001	*1, Thickness: 2 mm
Lap shear strength	MPa	1.4	3TS-4100-029	Al/Al*2 *1

*1 Curing conditions: At 23°C and 50%RH for 168 hrs

*2 Adhesive layer thickness: 1 mm, Test piece: Al (1050P)

5.2 Chemical resistance

Table 3 Chemical resistance of TB1211

Test chemical	Unit	Result	Test method	Remarks
Water	%	-0.5	3TS-9200-001	90°C×24h
Gasoline	%	-20.2	3TS-9200-001	50°C×24h
Test lube oil No.2	%	+5.0	3TS-9200-001	100°C×24h

Test method

Fill concave portions in glass or aluminum plates specified in JIS K 6820 with the liquid sample, and leave them at room temperature (23°C, 50%) for 168 hours.

Immerse these samples in various liquids for 24 hours. Then, remove the immersed samples, dry them for 24 hours at $65 \pm 5^\circ\text{C}$, and measure the mass at room temperature. Determine the mass change rate before and after immersion.

5.3 Initial pressure resistance

Table 4 Initial pressure resistance of TB1211

Clearance	Unit	Result	Test method	Remarks
0.10mm	MPa	0.07	3TS-4600-003	*1
0.20mm	MPa	0.04	3TS-4600-003	*1
0.50mm	MPa	0.01	3TS-4600-003	*1

*1 Curing conditions: At 23°C and 50%RH for 30 min

- Applied flange: 90 mm in OD, 60 mm in ID and 15 mm in surface width
- Material: JIS G 3101
- Clamp bolt: Bolt M12, 6 pcs.
- Pressurization rate: 0.01 MPa/min
- Surface finish: 6.3S
- Pressurization medium: Air
- Tightening torque: 27.4 N·m

5.4 Electrical characteristics

Table 5 Electrical characteristics of TB1211

Test item	Unit	Result	Test method	Remarks
Volume resistivity	$\Omega\cdot\text{m}$	5×10^{12}	3TS-5200-001	*1
Dielectric breakdown strength	MV/m	20	3TS-5230-001	*1

*1 Curing conditions: At 23°C and 50%RH for 168 hrs

6. Usage

- (1) Remove oil, moisture and other contaminants completely from the bonding surface.
- (2) After application, assemble parts as soon as possible.
- (3) Use the entire content as soon as possible after opening the container.

7. Directions for use

- (1) Do not inhale or ingest. Harmful to health. Do not inhale or ingest.
- (2) This product is harmful to the health. Do not touch it directly or inhale fumes.
- (3) While handling, use suitable protective equipment (respirator, safety glasses, protective gloves, protective clothing, etc.).
- (4) Use in a well ventilated area.
- (5) Combustible. Keep away from fire.
- (6) Keep out of reach of children.
- (7) If swallowed, do not induce vomiting. Immediately rinse the mouth, and get medical attention.
- (8) If in eyes, repeatedly and sufficiently rinse with clean water, and immediately get medical attention.
- (9) If on skin, wipe away with a cloth, and wash the skin thoroughly with soap.
- (10) If any bodily abnormalities occur, discontinue use, and get medical attention.
- (11) Before using, sufficiently confirm whether the method of application and the purpose are appropriate.
- (12) The effects on the application area should be confirmed in advance. If there are any problems, do not use.
- (13) Contains harmful materials. Do not use for drinking water or hot water supply piping.
- (14) Do not return leftover to original container. Dispose of it.
- (15) For detailed hazard information of the product, see the Safety Data Sheet (SDS).

8. Storage

To prevent deterioration and contamination, seal the container tightly, and store it in an indoor dark, dry place at 10 to 25°C away from flame, heat sources and direct sunlight.

9. Disposal

Dispose of the product as industrial waste.

10. Precautions

For Industrial Use Only

(Do not use for household purposes.)

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 not guaranteed values, but examples of experimental values obtained by our specified test methods.
We do not guarantee that the uses described herein do not conflict with any intellectual property right.
- Before using this product, confirm the appropriateness and safety of the use for the application in question, and bear all responsibilities and risks involved in the 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 or usage of the product to be used are unclear, never use it.
- For detailed safety information of the product, see the Safety Data Sheets (SDS).
To obtain the SDS, contact our sales office or customer service center.
 - Information in this document is subject to change at our own discretion.

11. Registered trademark

ThreeBond is a trademark or a registered trademark of ThreeBond Co., Ltd.