

ThreeBond

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ThreeBond Co., Ltd.

Technical Data

ThreeBond 1215

1. Product description

ThreeBond 1215 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 oil resistance and chemical resistance
- (2) Excellent adhesion to metals (aluminum, steel, etc.)
- (3) Excellent heat resistance and cold resistance
- (4) Fluid and easy to use

3. Applications

Sealing of various flange surfaces, threaded portions and parts requiring oil resistance

4. Properties

Table 1 Properties of TB1215

Test item	Unit	Result	Test method	Remarks
Appearance	-	Gray	3TS-2100-002	-
Viscosity	Pa·s	75	3TS-2F00-002	25°C, H-type, No.7, 20 rpm
Specific gravity	-	1.50	3TS-2500-002	25°C
Tack-free time	min	10	3TS-3130-005	*1

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

5. Characteristics

5.1 Characteristics of cured material

Table 2 Characteristics of TB1215 after curing

Test item	Unit	Result	Test method	Remarks
Hardness	-	A50	3TS-2B00-004	*1
Elongation	%	320	3TS-4190-001	*1 Thickness: 2 mm
Tensile strength	MPa	1.2	3TS-4190-001	*1 Thickness: 2 mm
Lap shear strength	MPa	0.8	3TS-4100-013	Al/Al *2 *1
Lap shear strength	MPa	0.9	3TS-4100-013	Fe/Fe *2 *1

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

*2 Adhesive layer thickness: 1 mm Test piece materials: Al (1050P) and Fe (SPCC SB)

5.2 Engine oil resistance

Table 3 Engine oil resistance of TB1215

Test item	Unit	Result	Test method	Remarks
Hardness	-	A46	3TS-2B00-004	*1
Elongation	%	190	3TS-4190-001	*1 Thickness: 2 mm
Tensile strength	MPa	2.2	3TS-4190-001	*1 Thickness: 2 mm
Lap shear strength	MPa	2.0	3TS-4100-013	Al/Al *2 *1
Lap shear strength	MPa	1.5	3TS-4100-013	Fe/Fe *2 *1

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

*2 Adhesive layer thickness: 1 mm Test piece materials: Al (1050P) and Fe (SPCC SB)

Test conditions: 120°C for 240 hrs

Agent used: Engine oil (SN 5W-20)

5.3 Gear oil resistance

Table 4 Gear oil resistance of TB1215

Test item	Unit	Result	Test method	Remarks
Hardness	-	A8	3TS-2B00-004	*1
Elongation	%	110	3TS-4190-001	*1 Thickness: 2 mm
Tensile strength	MPa	0.1	3TS-4190-001	*1 Thickness: 2 mm
Lap shear strength	MPa	1.5	3TS-4100-013	Al/Al *2 *1
Lap shear strength	MPa	0.9	3TS-4100-013	Fe/FE *2 *1

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

*2 Adhesive layer thickness: 1 mm Test piece materials: Al (1050P) and Fe (SPCC SB)

Test conditions: 120°C for 240 hrs

Agent used: Gear oil (GF-3 75W-90)

5.4 Chemical resistance

Table 4 Chemical resistance of TB1215

Test item	Unit	Result	Test method	Remarks
Water	%	-1.0	3TS-9200-001	At 90°C for 24 hrs
Gasoline	%	-5.0	3TS-9200-001	At 50°C for 24 hrs
Test lube oil No.2	%	5.0	3TS-9200-001	At 100°C for 24 hrs

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.

5.5 Initial pressure resistance

Table 4 Initial pressure resistance of TB1215

Test item	Unit	Result	Test method	Remarks
0.10mm	MPa	0.10	3TS-4600-003	*1
0.20mm	MPa	0.06	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
- Surface finish: 6.3S • Material: JIS G 3101 • Pressurization medium: Air
- Clamp bolt: Bolt M12, 6 pcs. • Tightening torque: 27.4 N·m
- Average surface pressure: 16 MPa • Pressurization rate: 0.01 MPa/15 sec

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 Sheet (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.

12. Registered trademark

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