ThreeBond

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Three Bond Co., Ltd.

Technical Data

Three Bond 1141G

Aqueous type liquid gasket

1. Outline

ThreeBond 1141G is an aqueous type liquid gasket whose main component is an aqueous acrylic resin. This product is not subject to Industrial Safety and Health Law, Ordinance on Prevention of Organic Solvent Poisoning or Fire Defense Law. Since it can be diluted with water, it can be used with good workability.

(Hereinafter, ThreeBond is abbreviated to TB.)

2. Features

(1) Aqueous type gasket sealant not harmful to working environment.
(2) It does not affect almost all rubbers or plastics.
(3) Excellent chemical resistance
(4) It can be used together with solid gaskets.

3. Uses

Sealing of various flange surfaces

4. Properties

4.1 Properties

Table 1 Properties of TB1141G

Test item	Unit	Property	Test method	Remarks
Appearance	-	Gray	3TS-201-01	
Viscosity	Pa·s	15	3TS-210-02	BH type No.5 20rpm
Specific gravity	-	1.26	3TS-213-02	25°C
Heating residue	%	68.0	3TS-217-93	
pH	-	9.0	3TS-531-01	

4.2 Change in viscosity with temperature

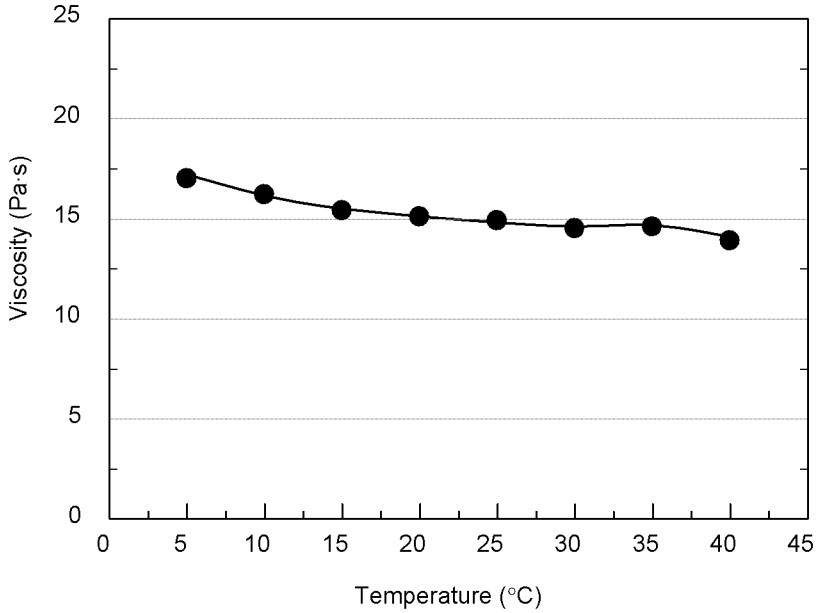

Fig. 1 Temperature-viscosity curve

4.3 Change in viscosity when diluted with water

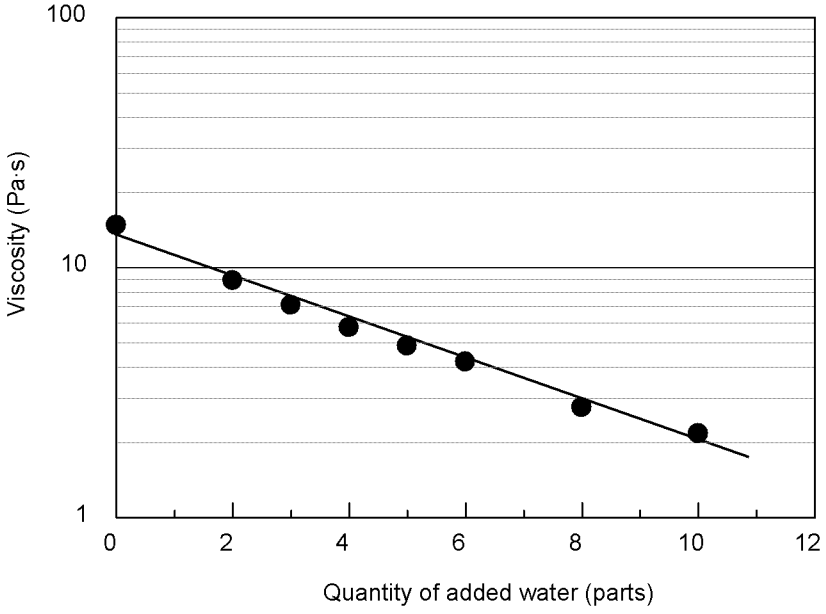

Fig. 2 Curve of viscosity vs. quantity of added water

5. Characteristics

5.1 Pressure resistance test

Table 2 Pressure resistance test of TB1141G

Condition	Pressure resistance value
Room temperature	10MPa or more
80°C	10MPa or more
150°C	9.0MPa
Resistance to high and low temperatures	10MPa or more

(Test method: Conforming to JIS K 6820)

- Applied flange: 90mm in OD, 60mm in ID and 15mm in surface width
- Surface finish: 6S
- Clamping bolt: 1/2W bolt, 6pcs.
- Hydraulic medium: Turbine oil No.1
- Average surface pressure: 16MPa
- Rate of application of pressure: 0.5MPa/min

5.2 Pressure resistance test at low surface pressure

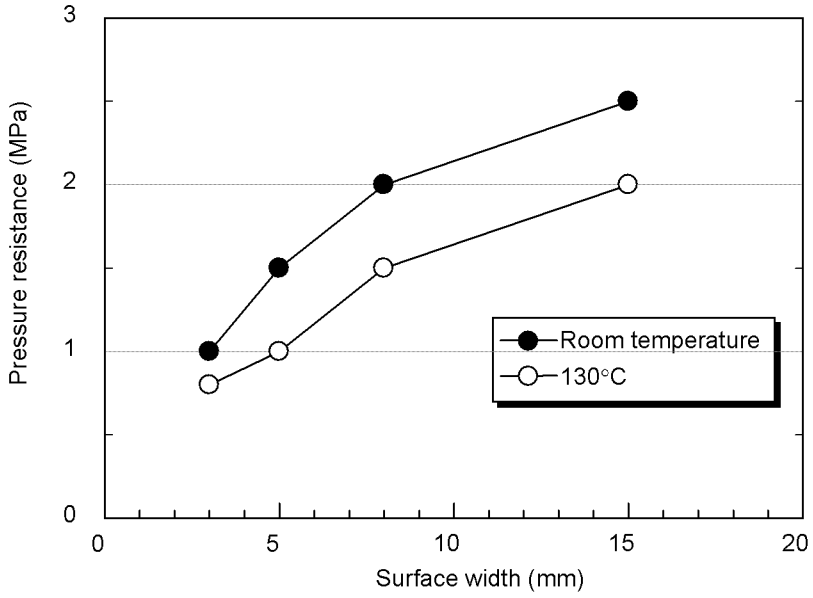

Fig. 3 Dependence of pressure resistance on surface width

(Test method: Conforming to JIS K 6820)

- Flange surface width: 3mm, 5mm, 8mm and 15mm
- Surface finish: 6S
- Clamping bolt: 1/2W bolt, 6pcs.
- Hydraulic medium: Turbine oil No.1
- Average surface pressure: 4MPa
- Test temperature: Room temperature and 130°C
- Drying time: 5min
- Rate of application of pressure: 0.2 MPa/10 to 20sec

(The same applies to the following items.)

5.3 Pressure resistance test at various surface pressures

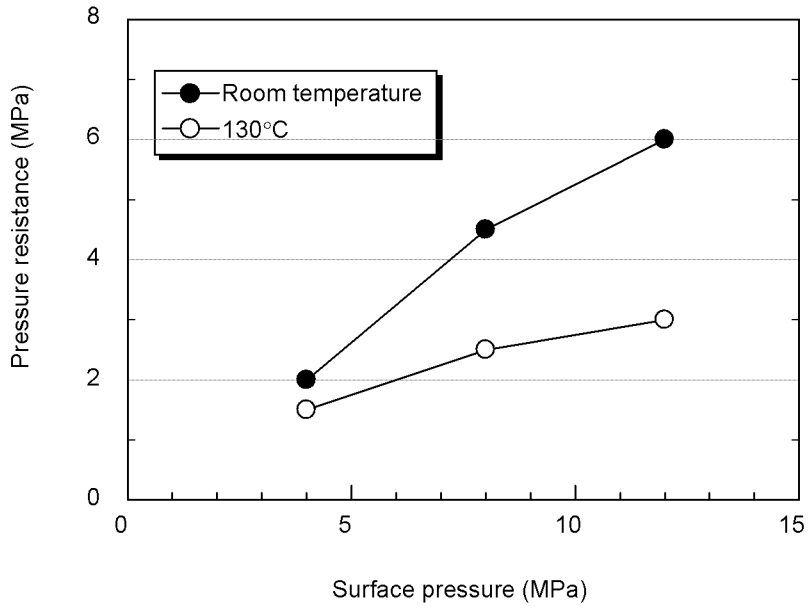

Fig. 4 Dependence of pressure resistance on surface pressure

(Test method: Conforming to JIS K 6820)

- Flange surface width: 8mm
- Surface finish: 6S
- Average surface pressure: 4MPa, 8MPa and12MPa
- Drying time: 5min

5.4 Pressure resistance test at various surface roughness levels

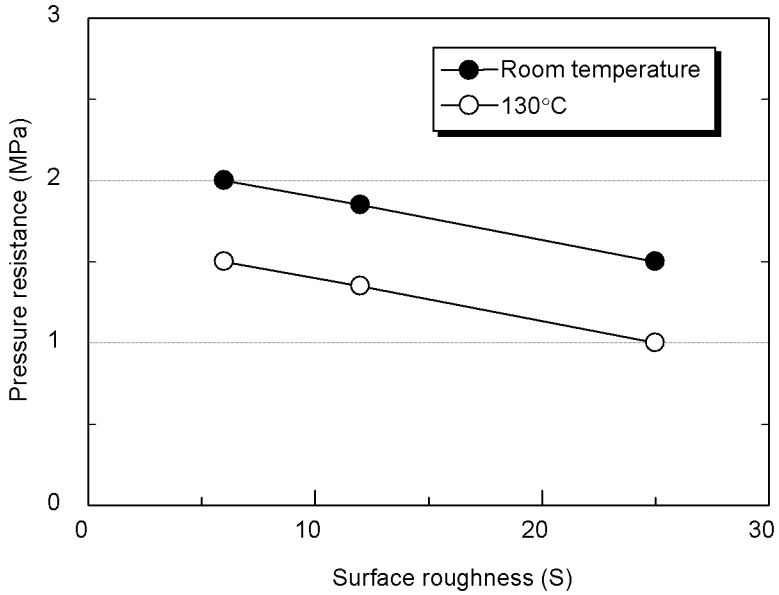

Fig. 5 Dependence of pressure resistance on surface roughness

(Test method: Conforming to JIS K 6820)

- Flange surface width: 8mm
- Surface finish: 6S, 12S and25S
- Average surface pressure: 4MPa
- Drying time: 5min

5.5 Chemical resistance test

Table 3 Chemical resistance of TB1141G

Item	Condition	Rate of change of mass	Remarks
Water	95°C for 24hrs	-2.3%	
Engine oil	95°C for 24hrs	+5.7%	Regular
Gear oil	95°C for 24hrs	+6.2%	
Gasoline	45°C for 24hrs	-7.5%	
Anti-freeze	95°C for 24hrs	+3.3%	Long-life coolant 99%
ATF	95°C for 24hrs	+4.4%	
ASTM No.2	95°C for 24hrs	+6.2%	

(Test method: Conforming to JIS K 6820)

Curing conditions: After the sealant was left at 23°C for 24hours, it was dried at 100°C for 3hours and left to cool in a desiccator.
After the cured sealant was immersed in each liquid under the specified conditions, it was rinsed lightly with petroleum ether and dried at 65°C for 24hours. Then, its mass was measured.

5.6 Corrosiveness test

(1) Drying at room temperature（20°C for 7days）

Table 4 Corrosiveness test of TB1141G (1)

Material	Appearance	Material	Appearance
Iron	No change	Copper	Discolored
SUS	No change	Brass	Slightly discolored
Aluminum	No change	Zinc chromate	No change

(2) Leaving at 40°C for 24hours after drying at room temperature (20°C for 7days)

Table 5 Corrosiveness test of TB1141G (2)

Material	Appearance	Material	Appearance
Iron	No change	Copper	Discolored
SUS	No change	Brass	Slightly discolored
Aluminum	No change	Zinc chromate	No change

(3) Leaving at 40°C for 24hours (loaded in undried state)

Table 6 Corrosiveness test of TB1141G (3)

Material	Appearance	Material	Appearance
Iron	No change	Copper	Discolored
SUS	No change	Brass	Discolored
Aluminum	Slightly discolored	Zinc chromate	No change

(Test method: Conforming to JIS K 6820)

The sample was applied to each test piece polished with polishing paper No.100. The application layer was approx. 3mm thick. After the test piece was left under the specified conditions, the sample was washed off the test piece, and the condition of the test piece surface was observed.

6. Usage

(1) Stir the sealant prior to use.
(2) Completely remove moisture, oil and other contaminants from the surfaces to be joined.
(3) Apply the gasket as thin and uniformly as possible.
(4) Laminate the surfaces 5 to 10minutes after applying it.
(5) The working temperature range is -40 to 140°C.
(6) If the sealant is brought into contact with water before it dries, it dissolves. To seal a part against water, sufficiently dry it after the part is assembled.

7. Instructions for use

(1) Do not inhale or drink the paste. It is harmful to the health.
(2) Do not use it for any purpose other than the specified purpose.
(3) Carefully read the directions prior to use.
(4) When it is used together with a solid gasket made of a fibrous material, such as paper, conduct test to check for nonconformity prior to use.
(5) Some materials may be discolored or corroded if this product is used. Ascertain in advance whether or not it affects the parts to be sealed with it.
(6) Do not use it for drinking water or hot water supply piping.
(7) People who have allergies or sensitive skin should avoid using it.
(8) When using it, wear appropriate protective clothings, such as a mask, impervious gloves and goggles. Use it in a well-ventilated outdoor area or in a place equipped with a local exhaust system.
(9) For hazard and toxicity information not mentioned herein, see the material safety data sheet (MSDS).
(10) If skinning occurs on the surface in the container, remove the skin, and stir the sealant.
(11) When the sealant is diluted with water, the characteristics of the uncured sealant may change. Sufficiently check the characteristics of the diluted sealant prior to use.

8. Storage

(1) Seal the containers tightly, and store it in a dry cool place avoiding direct sunlight.
(2) Do not store it in a place where it may freeze.
(3) Store it out of reach of children.

9. Disposal

(1) After using up the contents, have the container disposed of by an authorized disposal firm as industrial waste.

10. Applicable laws

Stated in MSDS

11. 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, you must accept the following sales terms.

- The technical data given herein are not guaranteed values, but actual measurements 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 product safety, 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.