ThreeBond

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Three Bond Co., Ltd.

Technical Data

ThreeBond 3168J

UV Curable Silicone Gel

1. Product description

ThreeBond 3168J is a one-part non-solvent UV-curing silicone gel. It can cure in a short time under irradiation with UV light. After curing, the gel has excellent vibration absorbing properties.
This product is a low halogen content material. The total chlorine content and total bromine content are less than 700 ppm each, and the sum of total chlorine content and total bromine content is less than 1000 ppm.

2. Features

①One-part non-solvent silicone resin
②Excellent UV-curing properties
③A soft gel is formed after curing
④Reduced content of low-molecular siloxane

3. Applications

Damping agent for optical pickups (CD, DVD and BD)

4. Properties

Table 1 Properties of ThreeBond 3168J

Item	Unit	Properties	Test method	Remark
Appearance	-	Blue	3TS-2100-001	
Viscosity	Pa･s	17	3TS-2F00-007	Shear rate: 20.0 s^{-1}
Specific gravity	-	1.02	3TS-2500-002	

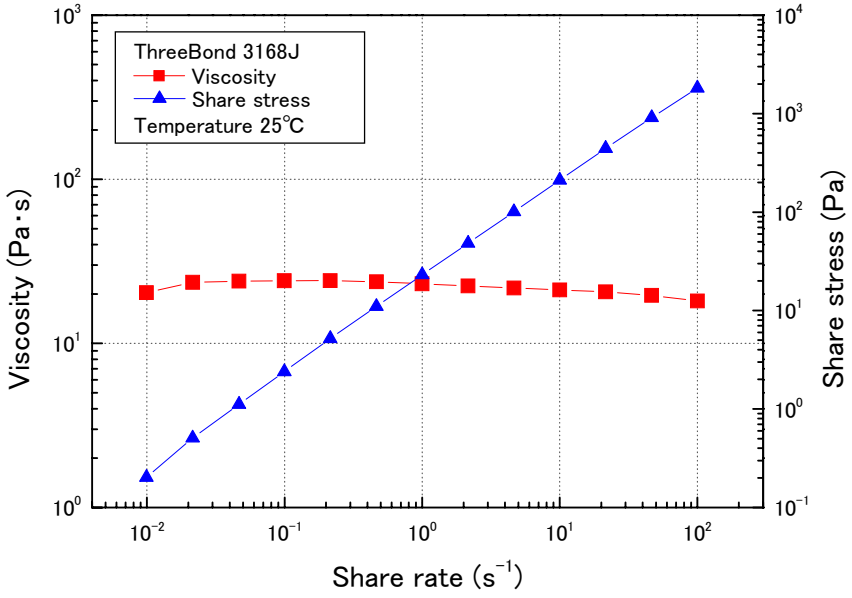

Fig. 1 Rheograms of ThreeBond 3168J
Flow curve measuring conditions：VAR・DAR Rheometer manufactured by REOLOGICA
Cone plate:　4° φ25mm

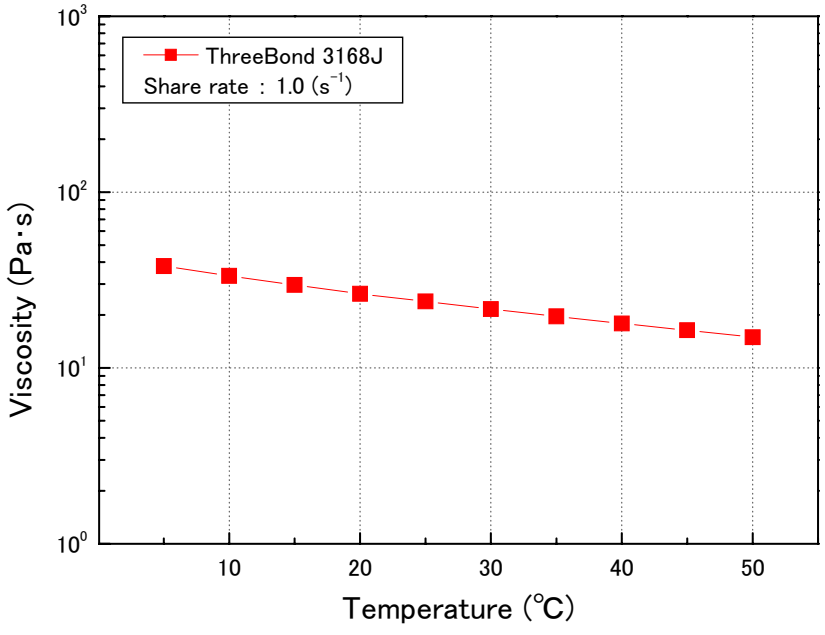

Fig. 2 Temperature-viscosity curve of ThreeBond 3168J
Temperature-viscosity curve measuring conditions：
Manufactured by REOLOGICA VAR・DAR Rheometer
Cone plate:　4° φ25mm

5. Characteristics

5.1 After-cure property

Table 2　After curing properties of ThreeBond 3168J

Item	Unit	Property value	Test method	Remark
Penetration	-	88	3TS-2B00-003	1/4 cone, 9.38 g
Thick film curability	mm	3	3TS-3160-001	
Low molecular weight cyclic siloxane ratio	ppm	300	Gas chromategraph mass spectrometer	D_3～D_{10}

Curing conditions (UV irradiation): High-pressure mercury vapor spot lamp SP9-250DB made by Ushio Inc. With heat ray cut filter, Direct-Radiation Optical Unit
Illuminance 300mW/cm^2, Exposure time 20s, Integrated light intensity 60kJ/m^2

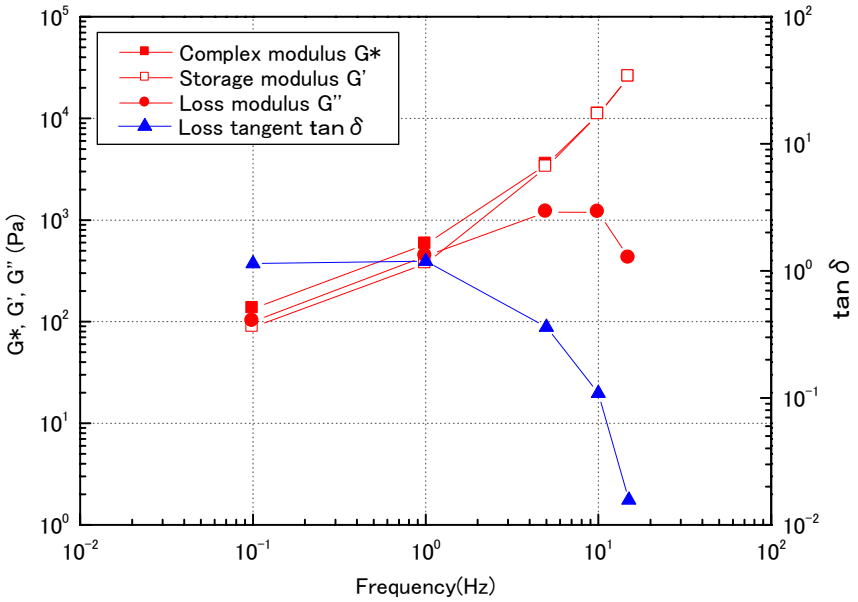

Fig.3　Dynamic viscoelasticity(frequency sweep) of ThreeBond 3168J
Conditions of measurement of dynamic viscoelasticity:
Model VAR.DAR rheometer (UV cell type) made by REOLOGICA
Imposed strain 0.7%, Parallel plate φ10mm, Gap1.0mm, 25℃

《Curing conditions》
LC8 Spot mercury lamp made by Hamamatsu Photonics
Illuminance 300mW/cm^2, Exposure time 20s, Integrated light intensity 60kJ/m^2

5.2 Change in viscoelasticity with UV irradiation time(curing property)

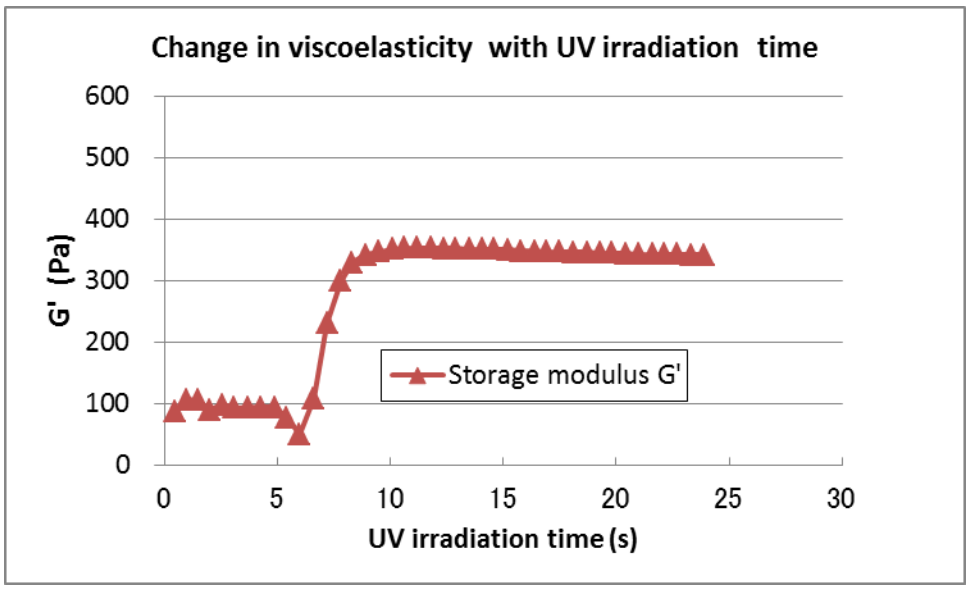

Fig. 4 Change in viscoelasticity of ThreeBond B3168J with UV irradiation time (curing property)

Conditions of measurement of dynamic viscoelasticity:

Model VAR.DAR rheometer (UV cell type) made by REOLOGICA

Frequency1H, Parallel plate φ10mm, Gap1.0mm, stress 50Pa

《UV irradiation conditions:》

LC8 Spot mercury lamp made by Hamamatsu Photonics

Illuminance 300mW/cm2, 25℃

In Fig. 4 UV irradiation was started 5 seconds after application.

5.3 Durability of cured resin (Penetration)

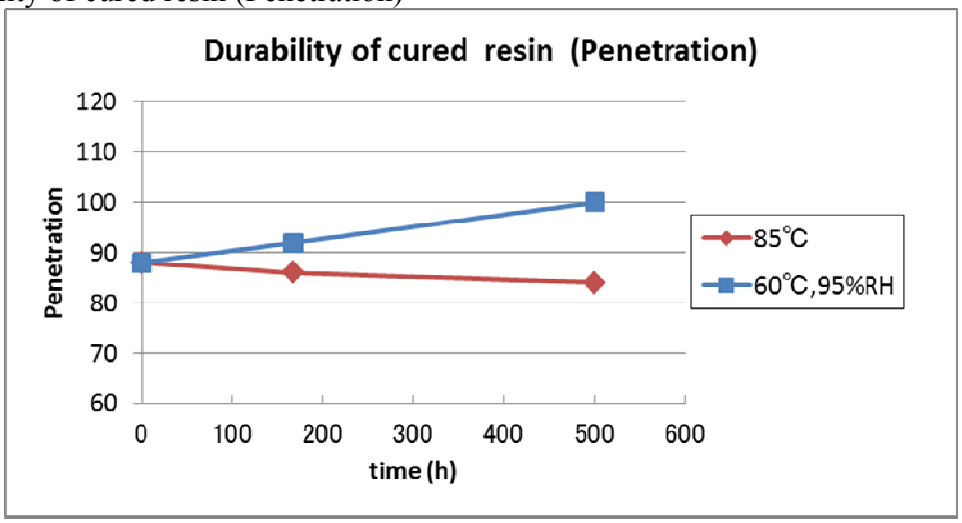

Fig. 5 Durability of cured resin（Penetration）of ThreeBond 3168J

6. Usage

①Before applying the resin, clean the areas to be filled with it.
②Irradiate the resin directly with UV light to cure it.

7. Directions for use

①The curing speed and the characteristics of the cured resin vary depending on the type, illuminance and integrated light intensity of light source. Check the conditions prior to use.
②Parts of the applied resin not exposed to UV light or in shadow do not cure. Also, before using, perform sufficient usage and application confirmation.
③Because some gas is generated during application and curing with UV light, use forced air ventilation in the working area and UV light irradiation area. Wear appropriate protective clothings, such as a mask, goggles and gloves (impervious), as necessary, and use the resin in a place equipped with a local exhaust system.
④Some materials may deteriorate if this product is used. The affects on the substrates should be confirmed in advance. If there are any problems, do not use.
⑤Do not transfer product into another container nor return unused product to the original container.
⑥Do not burn it. When burnt, it may generate toxic gas.
⑦Do not inhale or swallow. Harmful to health. Do not inhale or ingest.
⑧It is harmful to the health. Do not touch it directly or inhale its vapor.
⑨If it is swallowed, immediately get medical attention.
⑩If it gets in the eyes, wash them with clean water for about 15 minutes, and get medical attention.
⑪If on skin, may cause inflammation. If it adheres to the skin, immediately wipe it away with a cloth or paper, and wash the skin with soap and water.
⑫If any bodily abnormalities occur, discontinue use and seek medical attention. Also, persons with allergies or sensitive skin should avoid handling.
⑬Keep out of reach of children.
⑭For hazard and toxicity information not mentioned herein, see the material safety data sheet (MSDS).

8. Storage

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

9. Disposal

Have the product disposed of by a professional waste disposal company.

10. 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.