



## Two-component Modified Silicone Adhesive (Tin-Free)

### Product Description

FS211W3 is a two-component modified silicone adhesive for fast curing with tin free. Because of the EU starts to restrict DBT so we design this product. It is mainly a two-component curing modified silicone adhesive developed for fast curing of plastics, metals, and glass. After the product reacts with moisture in the air, it releases neutral alcohols and have hardening reaction. This resin is different from the traditional PU which contains isocyanate. This product has better adhesion strength than silicone type products. It has been widely used in potting and bonding in the 3C industry.

### Features

1. This product does not contain tin compounds and comply with REACH regulations..
2. This product is used for various substrates bonding.
3. This resin has flexible properties and fracture energy.
4. This product has stable properties in a wide range of temperature.
5. This product does not volatilize low molecular weight siloxane compounds. It will not pollute the electronic devices.
6. This resin is a two-component adhesive, you can use a two-component glue gun with a glue stick, and the method of use is simple and convenient.
7. This product has stable properties and it is able to storage in the room temperature.
8. After mixed, it will react quickly when exposed to air, and the surface drying is fast.
9. This product complies to the 2011/65/EU RoHS regulations.

### Typical Uncured Properties

	FS211W3A	FS211W3B
Composition	Polyether resin	Polyether resin
Appearance	Liquid	Liquid
Color	White	White
Viscosity*25°C, S14 10 rpm, cps	10,000~30,000	10,000~30,000
Specific Gravity @25°C	1.0	1.0

\*This value is for reference. Please refer to COA for the actual value.

### Typical Curing Properties

Surface Dry Time, 25 °C, min	15
Initial Curing Time, 25 °C, hr	1
Through Cure Time, 25°C, 3cm, hr	12
Through Cure Time, 25°C, 6cm, hr	24

### Typical Cured Properties

Glass Transition Temp., °C	-55
CTE*, ppm,	191
Hardness (Durometer) ASTM D2240-03, Shore A	37
Water Absorption Ratio (25°C /24hr), %	0.25
Elongation, %	288
Volume Shrinkage, %	2.53
Shear Strength, PC vs. PC, kgf/cm <sup>2</sup>	22
Shear Strength, ABS vs. ABS, kgf/ cm <sup>2</sup>	18
Shear Strength, PET vs. PET, kgf/ cm <sup>2</sup>	23
Shear Strength, Al vs. Al, kgf/ cm <sup>2</sup>	32
Shear Strength, Al vs. PC, kgf/ cm <sup>2</sup>	31
Shear Strength, Al vs. PMMA, kgf/ cm <sup>2</sup>	26
Shear Strength, PMMA vs. PMMA, kgf/ cm <sup>2</sup>	18
Shear Strength, SUS vs. SUS, kgf/ cm <sup>2</sup>	22
Shear Strength, SUS vs. PC, kgf/ cm <sup>2</sup>	26
Shear Strength, Copper vs. Copper, kgf/ cm <sup>2</sup>	20
Shear Strength, PVC vs. PVC, kgf/ cm <sup>2</sup>	23
Shear Strength, Nylon vs. Nylon, kgf/ cm <sup>2</sup>	15
Peel strength, NBR, kgf/25.4mm	1.5
Peel strength, SBR, kgf/25.4mm	1.1
Peel strength, EPDM, kgf/25.4mm	0.4
Peel strength, Silicone Rubber, kgf/25.4mm	0.2
Thermal Conductivity, W/mK	0.23
Surface Resistivity, Ω	1.7* 10 <sup>12</sup>
Volume Resistivity, Ω.cm	2.0* 10 <sup>11</sup>
Dielectric Constant, 100Hz	3.7 (0.02)
Dielectric Constant, 1KHz	3.4 (0.04)
Dielectric Constant, 1MHz	3.0 (0.05)
Dielectric Strength, KV/mm	13
Temperature Range, °C	-50~120

\* CTE: Coefficient of Thermal Expansion

### Initial Curing Strength (kgf/cm<sup>2</sup>)

	1 hr	2 hr	4 hr
PC v.s. PC	12	16	20

### Thermal Strength/Thermal Aging

Al vs. Al after bonding, 25°C*50%RH*7 days	
Temperature °C	Shear Strength, kgf/cm <sup>2</sup>
25	32
50	32
80	32
100	32
150	11
80 °C * 90%RH test time (hr)	
0	32
24	32
72	32
168	32
500	32
1000	32

The data contained in this bulletin is provided only as a guide for evaluation/consideration. These material characteristics are typical properties that are based on a limited number of samples tested in the laboratory. We cannot assume responsibility for results obtained by others or whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any product or method. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide.

### **Storage and Shelf Life**

This product should be kept without any possibility of moisture exposure. Replace the lid immediately after use. Shelf life of this product is six months when stored in dark place below 14~34°C in original, unopened containers.

### **Caution**

Some findings indicate a lack of potential for carcinogenicity with the compositions of this product by long term recurrent application to the skin. However, contact with skin is likely to produce mild transient reddening. It is important to remove adhesive from skin with soap and water thoroughly. DO NOT use solvents for cleaning hands. This product is of moderate acute toxicity by swallowing. If swallowed, call a physician. Avoid contact with eyes. In case of contact, flush with water for at least 15 minutes and get medical attention immediately. For specific information on this product, consult the Material Safety Data Sheet.

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